

### ABSTRACT OF THE DISCLOSURE

A fluorine gas generator for generating fluorine gas by electrolysis of an electrolytic bath comprising a hydrogen fluoride-containing mixed molten salt in which generator the electrolytic bath will not corrode the upstream line even upon interruption of HF feeding or in case of emergency is provided. The generator has a hydrogen fluoride gas feed line for feeding hydrogen fluoride gas into the electrolytic bath, a first automatic valve disposed on the hydrogen fluoride gas feed line and capable of being closed on the occasion of interruption of hydrogen fluoride gas feeding, and an inert gas substitution means for eliminating the hydrogen fluoride gas remaining in the line on the side downstream from the first automatic valve on the hydrogen fluoride gas feed line and substituting an inert gas therefor when hydrogen fluoride gas feeding is interrupted.

Fig. 1 is elected.